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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,992	11/07/2001	Robert B. Dybdal	700700-017	3329
21836	7590	08/04/2005	EXAMINER	
HENRICKS SLAVIN AND HOLMES LLP SUITE 200 840 APOLLO STREET EL SEGUNDO, CA 90245			SAMS, MATTHEW C	
			ART UNIT	PAPER NUMBER
			2643	

DATE MAILED: 08/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/007,992

Applicant(s)

DYBDAL ET AL.

Examiner

Matthew C. Sams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This office action has been changed in response to the amendment filed on 5/6/2005.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent et al. (US-6,542,716 hereinafter, Dent).

Regarding claim 1, Dent teaches of an embodiment for determining the communication link quality employing beacon signals. (Col. 4 lines 12-23 and 33-35) Dent teaches of an embodiment that includes satellites with beacon transmitters including continuous wave tone and coded signals. (Col. 4 lines 40-46) Dent teaches of a communications device that is capable of establishing UHF communications links with satellites, and with means for receiving and processing the beacon signals to determine the quality of the UHF. (Col. 3 lines 48-50 and Col. 4 lines 15-23) Dent does not specifically state that the continuous wave and coded signals are different for each of the communications satellites. However, it is obvious that a mobile communications

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device must be able to determine a difference between satellite channel transmissions because the channel transmissions would interfere with each other when a mobile communications device was an equal distance away from two different transmission sources. (Col. 5 lines 23-43) A method describing an existing embodiment is viewed as a derivation from the same idea.

Regarding claim 2, Dent teaches of a coded signal in a communications bandwidth employed by the communications satellite and a continuous wave tone that is out of the communications bandwidth. (Col. 4 lines 33-56)

Regarding claim 3, Dent teaches a communication device comprising a transponder. (Fig. 1 and Col. 3 lines 42-44) In the Applicant's specification, a "transponder" is used interchangeably with a "mobile telephone". (Page 1 [0010])

Regarding claim 4, Dent teaches a method of a communication device that comprises a voice and data communicator. (Col. 3 lines 42-48 and Col. 4 lines 23-32)

Regarding claim 6, Dent teaches a method of determining communication link quality employing beacon signals that comprises a beacon receiver. (Col. 4 lines 12-32)

Regarding claim 7, Dent teaches a method of determining communication link quality employing beacon signals that comprises a continuous wave tone receiver. (Col. 4 lines 12-15, 33-35 and 49-56)

Regarding claim 8, Dent teaches a method of determining communication link quality employing beacon signals that comprises a coded signal beacon receiver. (Col. 4 lines 12-32)

4. Claims 5 and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of Wiedeman et al. (US-2002/0032002 hereinafter, Wiedeman).

Regarding claim 5, Dent teaches the limitations of claim 1. Dent differs from the claimed invention in failing to mention a processor is used for receiving and processing the beacon signals. However, Wiedeman teaches of a means for receiving and processing the beacon signals comprising of a processor. (Page 2 [0014]) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the processor of Wiedeman with the communications device of Dent. One of ordinary skill in the art would have been motivated to do this since a processor is a vital for controlling the functions of a communications device. (Page 2 [0014])

Regarding claim 9, Dent teaches the limitations of claim 1. Dent differs from the claimed invention in failing to mention a means for the communicating device to inform to a user, information pertaining to the quality of the communication links. However, Wiedeman teaches of a low performance warning system for a mobile satellite service user terminal. (Page 3 [0021]) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the impaired loss of path warning of Wiedeman with the mobile communications device of Dent. One of ordinary skill in the art would be motivated to do this since this allows a user to be aware of the potential of reduced performance and dropped calls. (Page 3 [0022])

Regarding claim 10, Wiedeman teaches of communicating information provides a real time indication of link quality. (Page 3 [0023-0025])

Regarding claim 11, Wiedeman teaches of an LCD display attached to a wireless user terminal. (Page 3 [0022])

Regarding claim 12, Wiedeman teaches of information including noise information. (Page 3 [0027])

Regarding claim 13, Wiedeman teaches of information including interference information. (Page 3 [0028])

5. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of Wiedeman as applied to claim 9 above, and further in view of Wiedeman (US-6,587,687 hereafter, Wiedeman II).

Regarding claim 14, Dent in view of Wiedeman teach the limitations of claim 9. Dent in view of Wiedeman differ from the claimed invention in not mentioning the information including scintillation caused by multipath or ionospheric effects. However, Wiedeman II teaches of information pertaining to scintillation caused by multipath or ionospheric effects. (Col. 5 lines 5-16) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the information pertaining to scintillation of Wiedeman II with a mobile communications device capable of informing a user of the quality of the communication link like that of Dent in view of Wiedeman. One of ordinary skill in the art would have been motivated to do this since scintillation effects the amplitude and phase of satellite radio signals observed at the earth's surface, which makes decoding or demodulating the correct information from the signal difficult and can causes reduced performance.

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of Zamat (US-6,356,744).

Regarding claim 15, Dent teaches a method of determining the communication link quality employing beacon signals. Dent differs from the claimed device in failing to mention that the communications device can adjust the transmission power for the communications device. However, Zamat teaches a cellular system that instructs the

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communication devices to adjust the transmitting output power. (Col. 1 lines 22-45) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the ability to adjust the transmission power of a communications device like that of Zamat with Dent's method of determining communication link quality. One of ordinary skill in the art would be motivated to do this since it allows the mobile communications device to conserve power and to keep the base station from being saturated. (Col. 1 lines 22-24)

7. Claims 16, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of Zamat as applied to claim 15 above, and further in view of Hegendoerfer (US-6,326,922).

Regarding claims 16, 18 and 19, Dent in view of Zamat teach a method of determining the communication link quality employing beacon signals while having a communications device that is capable of adjusting its transmission power. Dent in view of Zamat differ from the claimed invention by not teaching of a collapsible transmission power booster being a high gain Yagi antenna. However, Hegendoerfer teaches of a foldable high gain antenna that is a Yagi antenna (Fig. 4). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the foldable high gain Yagi antenna of Hegendoerfer with the communications device of Dent in view of Zamat. One of ordinary skill in the art would be motivated to do this since Hegendoerfer's design allows for the mobile communications device to have a high gain antenna that is constructed on a printed circuit board, which is cost-effective for mass manufacturing. (Col. 3 lines 5-35)

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8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of Zamat as applied to claim 15 above, and further in view of Rudish (US-6,219,006).

Regarding claim 17 Dent in view of Zamat teach a method of determining the communication link quality employing beacon signals while having a communications device that is capable of adjusting its transmission power. Dent in view of Zamat differ from the claimed invention by not teaching of a log periodic antenna. However, Rudish teaches of a compact log periodic antenna (Fig. 2 [10]). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the log periodic antenna of Rudish with the communications device of Dent in view of Zamat. One of ordinary skill in the art would be motivated to do this since Rudish's design allows for a wide bandwidth with increased efficiency and sensitivity. (Col. 2 lines 33-40)

9. Claims 20-25 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of Wiedeman.

Regarding claim 20, Dent teaches of an embodiment for determining the communication link quality employing beacon signals. (Col. 4 lines 12-23 and 33-35) Dent teaches of an embodiment that includes satellites with beacon transmitters including continuous wave tone and coded signals. (Col. 4 lines 40-46) Dent teaches of a communications device that is capable of establishing UHF communications links with satellites, and with means for receiving and processing the beacon signals to determine the quality of the UHF. (Col. 3 lines 48-50 and Col. 4 lines 15-23) Dent does not specifically state that the continuous wave and coded signals are different for each

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of the communications satellites. However, it is obvious that a mobile communications device must be able to determine a difference between satellite channel transmissions because the channel transmissions would interfere with each other when a mobile communications device was an equal distance away from two different transmission sources. (Col. 5 lines 23-43) Dent differs from the claimed invention in failing to mention a processor is used for receiving and processing the beacon signals. However, Wiedeman teaches of a means for receiving and processing the beacon signals comprising of a processor. (Page 2 [0014] & Fig. 1) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the processor of Wiedeman with the communications device of Dent. One of ordinary skill in the art would have been motivated to do this since a processor is a vital for controlling the functions of a communications device. (Page 2 [0014] & Fig. 1)

Regarding claim 21, Wiedeman teaches of a processor that determines one or more link impairment factors from signal levels of beacon signals. (Page 1 [0007], Page 2 [0014] and Page 3 [0022] & [0030])

Regarding claim 22, Wiedeman teaches of a link impairment factor including a propagation loss factor. (Page 3 [0025])

Regarding claim 23, Wiedeman teaches of a link impairment factor including an interference factor. (Page 3 [0022])

Regarding claim 24, Wiedeman teaches of a link impairment factor, including a noise factor. (Page 3 [0027])

Regarding claim 25, Wiedeman teaches of a processor that is programmed to process data of variations in measured signal levels of the beacon signals to determine link impairment factors. (Page 2 [0014], Page 3 [0023], [0025], [0030] and [0031])

Regarding claim 28, Dent teaches that the communication stations comprise UHF communications satellites. (Col. 3 lines 48-52)

Regarding claim 29, Dent in view of Wiedeman teach that the communication stations are part of a terrestrial cellular network. (Dent: Fig. 1 and Col. 3 lines 42-50) (Wiedeman: Fig. 1 and Page 1 [0007])

Regarding claim 30, Dent teaches of a method of determining the communications link quality employing beacon signals with continuous wave tone and coded signals that are different for each communication station. (Col. 4 lines 12-46) Wiedeman teaches of a processor that is programmed to control a communications device, process beacon signals from one or more communication stations and determine the link quality between the communications device and the communications stations. (Page 2 [0014] and Page 3 [0022], [0030] & [0031]) Wiedeman teaches of user selectivity of operational modes during times of communications. (Page 1 [0005])

10. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of Wiedeman as applied to claim 25 above, and further in view of Duggan.

Regarding claim 26, Dent in view of Wiedeman teach the limitations of claim 25. Dent in view of Wiedeman differ from the claimed invention in not mentioning the link impairment factors include a scintillation factor. However, Duggan teaches of a link impairment factor pertaining to scintillation. (Col. 8 lines 58-68 & Col. 9 lines 1-3) At

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the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the link impairment factor pertaining to scintillation of Duggan with a mobile communications device capable of informing a user of the quality of the communication link utilizing a processor like that of Dent in view of Wiedeman. One of ordinary skill in the art would have been motivated to do this since scintillation effects the amplitude and phase of satellite radio signals observed at the earth's surface, which makes decoding or demodulating the correct information from the signal difficult and can causes reduced performance for the mobile communication device.

Regarding claim 27, Duggan teaches of a processor that is programmed to sequentially determine the link qualities. (Col. 12 lines 63-68 and Col. 13 lines 1-9)

11. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of the Applicant's admitted prior art, Dybdal et al. (US-5,781,845 hereafter, Dybdal).

Regarding claim 31, Dent teaches the limitations of claim 1, but differs from the claimed invention by not mentioning estimating values of time delay components resulting from multipath. However, Dybdal teaches using weighting values for time delays in equalization for a plurality of antenna elements. (Col. 8 lines 30-51) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the time delays of Dybdal into the communication system of Dent. One of ordinary skill in the art would have been motivated to do this since weighting values for time delay can reduce the signal degradation of reflections. (Col. 4 lines 58-18)

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12. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of Wiedeman as applied to claim 20 above, and further in view of Dybdal.

Regarding claim 32, Dent in view of Wiedeman teach the limitations of claim 20, but differs from the claimed invention by not mentioning estimating values of time delay components resulting from multipath. However, Dybdal teaches using weighting values for time delays in equalization for a plurality of antenna elements. (Col. 8 lines 30-51). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the time delays of Dybdal into the communication system of Dent. One of ordinary skill in the art would have been motivated to do this since weighting values for time delay can reduce the signal degradation of reflections. (Col. 4 lines 58-18)

Response to Arguments

13. Applicant's arguments filed 5/6/2005 have been fully considered but they are not persuasive.

Pertaining to the applicant's argument regarding "equipping a plurality of communications satellites with beacon transmitters that generate beacon signals including a continuous wave (CW) tone and a coded signal that are different for each of the communications satellites" (Page 9 lines 5-9), Dent discusses a satellite system that has paging channels (Col. 4 lines 33-35), which are equivalent to a CW tone signals and traffic channels (Col. 4 lines 40-48), which are equivalent to coded signals. Dent discusses a mobile radiotelephone that scans a plurality of paging channels and measures the signal strength of the paging channels. (Col. 2 line 57 through Col. 3 line

3) Therefore, Dent obviously discloses "equipping a plurality of communications satellites with beacon transmitters that generate beacon signals including a continuous wave (CW) tone and a coded signal that are different for each of the communication satellites", because otherwise there would not be a plurality of paging channels to scan.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., low signal level and/or excessive noise or a mechanization to determine the system noise spectral density is not described (Page 9 lines 15-18)) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Pertaining to the applicant's argument regarding "link impairments such as interference (claim 13) and scintillation (claim 14) are not addressed" (Page 9 lines 18-20), Wiedeman (US-2002/0032002) discusses a low performance warning system for user terminals communicating with a mobile satellite service. (Page 1 [0007]) Wiedeman discusses the operation of a user terminal's autonomous warning system by going through a scenario involving interference information. (Page 3 [0028-0030]) Therefore, Dent in view of Wiedeman discloses providing the communications device quality information of the UHF link including noise information and interference information.

The argument regarding amended claim 14 (Page 9 lines 21-28) is moot in view of the new grounds rejection.

Pertaining to the argument regarding claim 15, "Zamat teaches a method of power measurement based on autocorrelation techniques, which are not advantageously combined with Applicants' claimed method" (Page 10 lines 1-6). Claim 15 states "providing the communications device with a means for adjusting a transmission power of the communication device", which Zamat discloses a situation where a base station issues commands to mobile units to adjust their transmission levels. (Col. 1 lines 22-45) The examiner is not looking at Zamat to teach "autocorrelation would not reject noise and interference components" because those limitations are not recited in claim 15. Therefore, Dent in view of Zamat discloses providing a communication device with a means of adjusting transmission power.

Pertaining to the argument regarding claims 16, 18, and 19 (Page 10 lines 7-10), Dent in view of Zamat and Hegendoerfer discloses a high gain antenna (Hegendoerfer Col. 1 lines 30-34), a high gain Yagi antenna (Hegendoerfer Col. 2 line 64 through Col. 3 line 4), and a collapsible configuration for the high gain antenna. (Hegendoerfer Col. 2 line 57 through Col. 3 line 36) Therefore, Dent in view of Zamat and Hegendoerfer teaches the limitations of claim 16, 18 and 19.

Pertaining to the argument regarding claim 17 (Page 10 lines 11-17), the applicant states a 240-270 MHz (downlink) and 290-320 MHz (uplink) frequency range. However, the applicant disclosed in the specification, "The ultrahigh frequency (UHF) range of the radio spectrum is the band extending from 300 MHz to 3 GHz." Since the argued radio spectrum range is outside the original disclosed range, the examiner considers the basis for the argument new material and therefore moot.

Since no new argument were brought about claims 20-30, the original rejection stands in view of the further explanations.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Sams whose telephone number is (571)272-8099. The examiner can normally be reached on M-F 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (571)272-7499. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MCS
7/27/2005


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